

Development and Evaluation of an Evidence-Based Telephone Triage Orientation Education

Program for Oncology Registered Nurses

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### Dedication

This paper and project is dedicated to any person who has been diagnosed with a cancer and their caregivers, especially my beloved Dawn Farley and my grandmother, Patricia Freeze who also was a nurse. Both suffered with cancer and both now reside in heaven. Also, to the healthcare colleagues who nurture and care for those with cancer every day in our world. Most importantly, this work and all my work, is dedicated to God the Father, Jesus Christ my Savior, and the Holy Spirit who provides ever-present help and life purpose.

### Abstract

Telehealth is a growing area of healthcare. Within telehealth there is a subgroup entitled telephone triage. Oncology nurses provide telephone triage in private community oncology settings. However, in private community oncology settings constraints such as financial concerns, accreditation requirements, ever changing insurance and governmental issues may constrain the ability to create and maintain supportive structures for oncology care such as evidence-based nursing education. This paper describes the development and implementation of an oncology nursing telephone triage education program in a private, community, oncology office. Registered nurses performing telephone triage participated in an education needs assessment and one hour evidence-based telephone triage “basics” face to face education program. This was followed by a perceptions survey immediately after the offering and one week later. Education needs assessment findings were incorporated into the education offering or provided to office leadership for future education planning. Perceptions of the registered nurses following the evidence-based education offering included, increased awareness regarding the role of oncology nursing telephone triage and scope of practice, the importance of effective interpersonal communication skills when speaking with callers, the integration of a systematic approach with callers, the use of mnemonics to improve consistency of caller content and symptom management assessment.

*Key Words: telehealth, telephone triage, telephone mediated care, oncology, oncology medical home, telephone triage guidelines, telephone triage standards*

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**Section One**

The American Hospital Association (AHA) published an Issue Brief documenting the growing integration of telehealth within healthcare organizations as a cost effective delivery method to increase patient care access. As American healthcare has continued to shift in recent years from inpatient to outpatient care due to healthcare re-organization and financial pressures (Hickey & Newton, S.,2012; Towle, 2009), innovative delivery methods such as telehealth have become increasingly attractive to healthcare organizations.

Innovative delivery methods are essential for healthcare organizations delivering care to an aging American population in which many are living with chronic conditions and may have limited financial, local healthcare, and transportation resources (Doorenbos et al., 2010; Gleason, O'Neill, Goldschmitt, Horigan, & Moriarty, 2013). According to the American Society of Clinical Oncology (2016) and the Centers for Medicare and Medicaid (2015), the aging American population will also contribute to the convergence of increasing numbers of people with both a cancer and chronic illness (Centers for Medicare and Medicaid Services, 2015).

Registered nurses in ambulatory settings (Mastal & Levine, 2012) often provide care to this aging population by performing telephone triage, one type of telehealth. According to the American Academy of Ambulatory Care Nurses (AAACN), there are over three million nurses caring for patients in ambulatory care settings, which account for approximately 25% of the registered nurses in the United States healthcare system (Mastal & Levine, 2012). In their most recent position statement (American Academy of Ambulatory Care Nurses, 2016), the AAACN clearly endorses the role of registered nurse in three specific areas. First, it is essential that

registered nurses work to the full extent of their licensure and education in the ambulatory setting to assure safe, high quality care to an ever increasing complex and diverse patient population. Additionally, medical assistants and licensed practical nurses should maintain medical and nursing activities within their own scopes of practice and work, as well as, refraining from registered nurse duties (American Academy of Ambulatory Care Nurses, 2016). Second, registered nurses in the ambulatory setting are perfectly positioned and should be recommended to coordinate care across complex health care settings while engaging and promoting connections between interdisciplinary team members, patients, and their caregivers (American Academy of Ambulatory Care Nurses, 2016). Third, the AAACN clearly distinguishes the role of the ambulatory registered nurse as “critical in the provision of telehealth and virtual care” to which telephone triage is a part (American Academy of Ambulatory Care Nurses, 2016).

The AAACN (Espensen, 2009) suggests the term telehealth be recognized as an “umbrella term” referring to a broad range of services delivered across distances by all health-related disciplines. The AAACN also delineates telephone triage as a component of telehealth nursing practice (Espensen, 2009; Moss, 2014). Additionally, the AAACN defines telephone triage as, “an interactive process between nurse and client which occurs over the telephone and involves identifying the nature and urgency of client health care needs and determining the appropriate disposition” (Espensen, 2009, p. 5; Moss, 2014). Hickey and Newton (2012), editors of the Oncology Nursing Society’s *Telephone Triage for Oncology Nurses*, wrote that successful oncology telephone triage was a “key” skill for the ambulatory oncology nurse (Hickey & Newton, 2012).

Telephone triage provided by registered nurses can occur in a variety of settings including emergency rooms, hospitals, ambulatory care offices, oncology and primary care

medical homes, as well as, college health settings (Edington, 2012; Espensen, 2009; Hickey & Newton, 2012; Utilization Review Accreditation Commission, 2017). Even more specifically within each setting, registered nurses may be performing telephone triage individually or in a call center environment (Espensen, 2009; Hickey & Newton, 2012; Utilization Review Accreditation Commission, 2017).

In order for registered nurses in any setting to implement healthcare quality improvement, they must have available the necessary education, scientific evidence, financial, and human resources (American Academy of Ambulatory Care Nurses, 2016; Joshi, Ransom, Nash, & Ransom, 2014; Utilization Review Accreditation Commission, 2017). The AAACN reported since the late 1990's there has been a lack of telehealth nursing education in academic settings and set out to develop an evidence-based essentials document to fill the educational void (Espensen, 2009). The first telephone nursing practice essentials were developed by the AAACN in 1997. The document was revised and published again in 2001, and again in 2009. The 2001 document broadened the language of the telephone nursing practice essentials to telehealth nursing practice in an effort to address the evolving concept of telehealth. Within the document, the AAACN includes a strong endorsement for telephone triage education (Espensen, 2009).

The implementation of an evidence based, system-wide telephone triage call center, staffed with registered oncology nurses could be an example of a healthcare quality improvement project in an outpatient oncology setting. This paper will describe the development of an evidence based education program for registered nurses working in a private outpatient oncology medical home who provide telephone triage in an evolving nursing call center.

**History of telephone triage**

The concept and practice of triage in healthcare originated in World War I in France. As described by Hickey and Newton (2012, p. 6), the French word “trier” means, “to sort”. As wounded soldiers were assessed for care, “triaging” designated who and who not would receive and at what intensity medical services. The goal was to maximize resource utilization to those who could benefit, and unfortunately, not disperse limited resources to those who were dying. Today, in any emergency situation in which healthcare service is being delivered, from war zones to natural disasters to hospital emergency rooms, triage occurs in the first moments of contact to set priorities for care. In these instances, the triage process occurs many times in a face-to-face manner.

Since the 1960’s in the United States, the telephone has become an integral part of healthcare and the triage process (Hickey & Newton, 2012). Beyond the emergency room, the emergence of “ask a nurse” lines within Health Maintenance Organizations to managed care follow up phone calls in the 1990’s provide examples of the evolution of nursing telephone triage. Since then, telephone relationships between nurse and those seeking healthcare has continued to grow and become more sophisticated (Hickey, & Newton, 2012). Until very recently, telephone mediated care could be constrained by the inability to visualize one another. Particularly, in the absence of visualization, nurses performing telephone triage in any setting need to be expert in the areas of verbal communication, interviewing skills, assessor of medical urgency, patient education, and patient advocacy (American Academy of Ambulatory Care Nurses, 2016; Hickey & Newton, 2012).

In ambulatory healthcare settings, including oncology, effective telehealth and telephone triage services have shown to benefit patient/caregiver outcomes, healthcare organization outcomes, and nursing outcomes (American Academy of Ambulatory Care Nurses, 2016).

Patient and caregiver benefits include telephone emotional support, improved medical management including a lower incidence of hospitalization, improved access to the appropriate healthcare setting, guidance for healthcare choices, and improved patient satisfaction (American Academy of Ambulatory Care Nurses, 2016; Compaci, Ysebaert, Oberica, Derumeaux, & Laurent, 2011; Desrochers, Donivan, Mehta, Laizner, & Laizner, 2016; Doorenbos et al., 2010; Wilson & Hubert, 2002). Effective telehealth and telephone triage services have also resulted in emergency room avoidance, reduced readmission rates leading to reduced hospital acquired infections, and inappropriate use of higher acuity healthcare settings (Compaci et al., 2011; Doorenbos et al., 2010; Gleason et al., 2013; Lamberta, 2016).

The AAACN (2016) conveys the provision of telephone triage should be within the role of the registered nurse and should never be delegated to non-licensed personnel, licensed practical nurses, or medical assistants to help achieve all of the stated benefits. Nurses delivering telephone triage reported stronger nurse patient/caregiver relationships (Lamberta, 2016) and improved patient contact, particularly when functioning in a primary nurse care model (Wilson & Hubert, 2002).

### **Needs and challenges of implementing telephone triage**

The continued shift of care from the inpatient to outpatient care setting has resulted in more persons having a higher acuity of illness in the community. A higher acuity of illness has contributed to the growing need for telephone triage (Gleason et al., 2013). Another influence on the growth of telephone triage occurs as models of healthcare continue to evolve. External



pressures for patient centered cost effective care continue to be a priority and developing methods to accomplish these goals will be at the forefront of healthcare (American Hospital Association, 2016). Finally, the availability of a vast array of information technology, which continues to grow and develop, permits a broadening access to healthcare with lower costs and improved ease of use.

Despite the growing number of resources and support, before an innovation diffusion such as evidence-based telephone triage can be implemented in any organization, proper resources should be assessed, education should be considered, and multiple innovation strategies combined (Joshi et al., 2014). The education and innovation diffusion strategies may be influenced by organizational culture, priority, and the availability of human and financial resources. One type of healthcare organizational structure is the outpatient, privately owned physician office or network.

Challenges for privately owned physician practices to implement infrastructure such as telephone triage include growing governmental and insurance regulations. Examples of these include the integration of meaningful use strategies, HIPPA compliance, Affordable Care Act requirements and receiving payment from insurance companies (Ritchie, Marbury, Smith, & Pofeldt, 2014). Additionally, administrative responsibilities, the need for increasing infrastructure with increasing operational costs, and constantly keeping pace with ever-growing needs of information technology integration while being affected by shrinking financial margins are the forces that must be delicately balanced daily in a physician owned outpatient office or network (American Society of Clinical Oncology, 2016). All of these combined forces continue to threaten the existence of private practice outpatient oncology (American Society of Clinical Oncology, 2016). Further, additional examples of the challenges or barriers include emerging

reimbursement structures in which private insurers are out-pacing Medicare, lack of evidence on telehealth quality and cost savings, and misperceptions on how much financial investment is required to integrate telephone triage into existing healthcare organizations (American Hospital Association, 2016).

Within the organizational culture, the value the organization places on the role of nursing, interdisciplinary teamwork, and level in which team members operationalize their license can also influence innovation diffusion. External influences such as organizational partnerships and accreditation bodies may inspire change and regulate the speed of innovation implementation. Given these constraints, the integration of telephone triage in the private physician outpatient office or network should be completed with a useful, evidence-based, cost effective approach in hopes of increasing cost effective quality access to oncology services.

## **Section Two**

### **Summary of the Evidence from the Literature**

The following PICOT question was considered during the literature search:  
“In ambulatory oncology nurses, what is the effect of an evidence-based telephone triage education program?”

Literature regarding telephone triage was reviewed and assessed for the impact to the patient, nurse, and healthcare system (see Appendix A). The literature was then summarized regarding telephone triage and telephone triage education and categorized in three areas. First, the benefits and challenges of providing telephone triage in an outpatient community oncology setting. Second, identification of evidence-based essential content for telephone triage nursing education in the ambulatory oncology setting. Third, to explore evidence-based methods and evaluation strategies for nursing telephone triage education provision.

**Benefits and challenges of providing telephone triage in the ambulatory oncology medical home setting.**

As the shift from inpatient to outpatient oncology care has continued to grow in community settings, traditional telephone triage methods focusing on sorting caller issues, determining urgency and disposition were being identified by oncology patients as inadequate (Wilson & Hubert, 2002). Oncology patients expressed the need for expanded telephone support in the areas of medical advice, disease understanding, and emotional support. Wilson and Hubert (2002) claimed an initial recognized benefit of what they called; “telephone mediated care” was the holistic telephone nursing support provided to cancer patients across the challenging journey of a life limiting illness.

Documented benefits of effective nursing telephone triage include improved patient satisfaction, care continuity, increased access to the appropriate care setting, improved symptom and medical management, reductions in emergency room visits, provision of emotional support, problem solving, and encouragement to patients. These benefits are often greater in the ambulatory oncology setting when nurses who interact on the telephone may be familiar with the patient’s psychosocial context, patterns of illness, and approaches to self-care due to more frequent number of office and telephone interactions (Compaci et al., 2011; Gleason et al., 2013; Galiano-Castillo et al., 2013; Mastal & Levine, 2012; Wilson & Hubert, 2002).

An interdisciplinary team at Memorial Cancer Institute of Memorial Healthcare System in Hollywood, Florida investigated the challenges with oncology patients coming to the emergency room who then were experiencing unnecessary patient discomfort, interruptions in treatment, and additional financial burdens (Lamberta, 2016). They found patients were uneducated regarding emergency room access or they were receiving advice from non-clinical

personnel when calling the office, which sometimes led to inappropriate emergency room utilization. The interdisciplinary team structured a process improvement effort in which an oncology nurse triage call center was developed. The oncology nurse triage process improved patient education, which directed ambulatory oncology patients to call the oncology nursing triage center prior to utilizing the emergency room. The improved triage system resulted in a 60% reduction in daily emergency room use, which translated to a cost savings to the health system of approximately one million dollars per month. Simultaneously, patient satisfaction also improved (Lamberta, 2016).

When surveying ambulatory care nurses, Mastal and Levine (2012) discovered that the continued evolution of medical home models would require nursing proficiency in chronic disease management, health risk appraisal, care coordination, care transitions, health promotion and disease prevention. Those nursing skills would need to be appropriately integrated into oncology telephone triage services and oncology telephone triage nursing education. Often, goals of oncology medical home telephone triage processes are focused more on determining the timing of the interaction between provider and patient vs more traditional goals of providing medical advice for further in home self-care. The oncology medical home telephone triage nurse determines caller needs and urgency. After which he or she prioritizes caller/provider visit timing based upon how quickly the patient should be seen at the office. Once nursing assessments are complete, caller need combined with caller urgency, determine which one of four options should be presented to the patient as the recommended plan:

1. Should the patient be seen immediately?
2. Or as soon as possible in the new daily available acute care slot by any available oncology provider?

3. Or the first available appointment with their specific oncology provider?
4. Or can the concern wait until the next visit with their specific oncology provider?
5. Or does the patient need higher acuity attention?

(American College of Surgeons, 2016; Waters et al., 2015).

The hope of this method of telephone triage nursing education and delivery is to, as quickly as possible, have caller needs assessed, urgency determined, and care dispositions made which includes emergency room avoidance when appropriate (Waters et al., 2015).

In general, current challenges to telephone triage interactions in healthcare have to do with non-face to face communication, unpredictable workload demand, and utilization of a workforce without a current reimbursement structures (Ernesäter, Engström, Winblad, Holmström, & Rahmqvist, 2016; Flannery, Phillips, & Lyons, 2009; Wahlberg, Cedersund, & Wredling, 2005). The inability to visualize the caller can hamper assessment particularly between an uneducated inexperienced triage nurse and a distressed caller (Wilson & Hubert, 2002). The integration of telephone triage protocols can help provide consistent care in these situations. Yet, Hubert and Wilson (2002) warn that although telephone triage protocols are designed and considered very useful, they should not replace nursing judgment. Wahlberg et al., (2005) also cautioned the use of protocols for telephone triage might be overemphasized by health care organizations and leaders. The overemphasis could minimize critical thinking by the registered nurse performing telephone triage (Wahlberg et al., 2005).

Unpredictable workload demand can be another challenge to the integration of telephone triage. This challenge can be somewhat lessened by a periodic analysis of call volumes and call problem assessments (Flannery et al., 2009). A further challenge telephone triage nurses may encounter is the expectation of the caller vs. the opinion of the telephone triage nurse when it

comes to the course of action post call. When there is a different expectation of the caller than the outcome, there can be tension and dissatisfaction with both parties (Ernesäter et al., 2016). Because of these multiple challenges, assuring that telephone triage registered nurses are well trained is critical (Desrochers et al., 2016).

A dilemma that health care organizations implementing nursing telephone triage must address is determining what framework, resources, and protocols will be allotted to implementing the nursing telephone triage process. An organizational evaluation of and commitment to telephone triage processes is necessary to maximize implementation. There are different facets of telephone triage implementation processes available for review and use. Each ambulatory organization should regularly evaluate and improve current processes to determine if effectiveness and efficiency are being achieved (Towle, 2009).

**Evidence-based essential content for nursing education regarding telephone triage in the ambulatory oncology setting.**

To determine oncology nursing telephone education content, organizations need to determine what framework, resources, and protocols will be utilized (Towle, 2009). These determinations can begin by the review of professional recommendations. There are two professionally endorsed “core” texts related to oncology telephone triage nursing education. These texts are the AACN’s Telehealth Nursing Practice Essentials, and Telephone Triage for Oncology Nurses both published by the Oncology Nursing Society (ONS) (Hickey & Newton, 2012; Mastal & Levine, 2012).

The AACN recommends that nurses and health care organizations each have a part in developing successful ambulatory care education for nurses who participate in telephone triage (Mastal & Levine, 2012). Health care organizational recommendations include developing and

educating nurses on the ambulatory scope of practice, as well as developing continuing education and orientation that enhance and validate clinical competence in patient safety, evidence-based care, and nursing leadership. Before beginning telephone triage nursing education, the ambulatory organization needs to determine who will be performing telephone triage and what theoretical framework/model will be effective for triage nurses to follow when talking with patients and families. The AACN clearly endorses the requirements for telephone triage providers to be individuals with the minimum of registered nurse credentials (American Academy of Ambulatory Care Nurses, 2016). The selected framework or model should help to determine initial and ongoing nursing education. In addition to a theoretical framework, there needs to be organizational determination of the goal of the telephone triage service. This is particularly important in an oncology medical home as the goal of nursing triage is to connect with the patient and determine urgency and timing of patient/provider visits.

Identification of the framework and goals will further define necessary educational elements to be included. Andrews (2014) and Greenberg (2009) offer two examples of telephone triage frameworks. Andrews, from the University of York Nursing Professional Development programs, recommended that nurses in a telephone consultation role utilize and be educated on the following process when interacting with patients over the telephone:

1. Take a Comprehensive History
2. Use expert knowledge and clinical judgment to identify potential diagnosis
3. Refer patients to an appropriate specialist
4. Use extensive practice experience to plan and provide skilled and competent care to meet patient's health and social care needs, involving other members of the health-care team as appropriate.

5. Ensure the provision of continuity of care, including follow up visits
6. Assess and evaluate the effectiveness of the treatment and care provided with patients, and make changes as needed
7. Work independently
8. Make sure that each patient's treatment and care is based upon best practice.

Andrews (2014) further stressed some key points related to the above information and nursing telephone triage education. First, telephone care is routine in the primary care setting. Second, education support for nurses providing this care is not routinely made available. Third, telephone triage/consultation skill acquisition is an “essential” element of nursing professional development and continuing education. Finally, ambulatory care settings should develop quality improvement processes to evaluate, audit, and innovate telephone triage effectiveness.

In an effort to develop a comprehensive model for the process of nursing telephone triage, Greenberg (2009) conducted interviews with ten telephone triage nurses to support the model and guide nursing education. Greenberg (2009) found that the nursing telephone triage process consisted of three steps: gathering information, cognitive processing, and output. She suggested that these steps could be consecutive or simultaneous. Her visual model (Appendix B) is helpful and could be incorporated as a guide for teaching and evaluating telephone triage call components. After the interviews, Greenberg (2009, p. 2628) stressed that nursing education should include the three steps but should also emphasize, “information gathering, use of implicit and explicit information to identify client needs, and translating healthcare information back into language comprehensible to clients”.

Final foundational elements of telephone triage education is electronic health record familiarity, and additional triage software or information technology applications (Seifert et al.,



2004; Towle, 2009). Oncology telephone triage nurses may need to retrieve health information quickly in emergent patient situations. Therefore, prior to or early in the orientation/education process, assessment of nursing electronic record navigation skills is helpful and should be addressed (Towle, 2009). After electronic health record familiarity is established, familiarizing staff with any triage information technology connectivity or equipment, such as head set or microphone, needs to be completed (Gallagher-Lepack, Scheibel, & Gibson, (2009). Matching the training environment to the actual telephone triage setting could optimize learning (Gallagher-Lepack et al., (2009).

After determination of who will be educated and performing telephone triage, followed by electronic health record familiarity, specific education content should be determined. Knowledge of disease-based oncology and symptom management are necessary content for oncology telephone triage nurses. (American Academy of Ambulatory Care Nurses, 2016; Gleason et al., 2013). In addition to the AAACN and the ONS endorsed standards, which include disease based content; topics related to symptom management such as pain assessment have been identified in the literature. Also identified as necessary content are algorithms for shortness of breath, neutropenic fever, bowel obstruction, gastrointestinal symptoms, deep vein thrombosis, chest pain, neurologic changes, anxiety, abuse, depression, and oncologic emergencies. (Gleason et al., 2013).

Disease based and symptom management content can be supported by electronic care pathways or algorithms used by oncology telephone triage nurses. When care pathways or algorithms are going to be used, they should also be included in nursing education (Stacey et al., 2015). The Knowledge to Action Framework has been used to conduct a retrospective pre-/post-study design to evaluate the impact of education on oncology nurse satisfaction and confidence

using symptom protocols (Stacey et al., 2015). In this study, 107 nurses who participated applied symptom protocols to the following 13 symptoms: bleeding, anxiety, breathlessness, fever with neutropenia, diarrhea, constipation, fatigue, mouth soreness, skin reactions, loss of appetite, peripheral neuropathy, nausea, and vomiting (Stacey et al., 2015). The findings concluded that training improved self-confidence in nursing assessment, telephone triage, and guiding patients in self-care for cancer-treatment-related symptoms, and use of protocols to facilitate symptom assessment, triage, and self-care (Stacey et al., 2015).

The next important area for content consideration is that of interpersonal communication skills for oncology telephone triage nurses (Ernesäter et al., 2016; Hawkins, 2012; & Tsimicalis et al., 2011). Topics such as active listening, voice tone and physical assessment without visualization have been cited as crucial for telephone triage nurses. Telephone triage has been identified as a “bridge to care”, a method of obtaining supportive presence, and providing paths to individual medical strategies. As a result, educating nurses on voice tone and pacing is essential to maximize productivity and improve trust/supportive presence on a telephone triage call (Desrochers et al., 2016). Maintaining a supportive therapeutic voice tone has been shown to be especially beneficial when a caller is verbalizing and demonstrating anxiety (Desrochers et al., 2016).

Education in non-verbal telephone triage communication skills are also core elements of nursing education. For example, determining how the caller says something can be relevant. Is the voice volume loud or soft? Is the speech speed slow or fast? The use of vocal cords to complete speech is one communication method. However, considering other noises made from the body outside of speech may offer assessment data. Moaning, coughing, or laughing could be examples of these interactions. If a person only moans on a call, then information from a

caregiver would obviously be necessary (Wahlberg et al., 2005). Other non-verbal communication from the caller could be considered the “background noise” of the call. The nurse can purposely listen to the background environment to determine if there are any relevant cues, which may be helpful in his or her nursing telephone triage assessment (Purc-Stephenson & Thrasher, 2010). Putting together, “a picture” in the nurse’s mind as he or she gathers all verbal and non-verbal information can be a helpful assessment and learning tool (Purc-Stephenson, & Thrasher, 2010).

An important emphasis in registered nurse telephone triage communication education is the heightened awareness concerning the first moments or initial interaction between the triage nurse and the patient caller (Khairat & Rudrapatna, 2014). The first few moments can determine how effectively and quickly the nurse can distinguish between critical and non-life threatening situations (Towle, 2009). The impact of nursing communication in the initial call interaction can influence the overall caller perception of the effectiveness of the call at the call’s conclusion (Desrochers et al., 2016). The importance of using a kind manner in the initial call interaction was also determined to be helpful (Wahlberg et al., 2005). From the caller’s perspective, the manner in which the telephone triage nurse handled interpersonal communication was often as important as the result of the call (Towle, 2009).

Ethical and legal considerations are additional essential content components for oncology telephone triage communication education. Confidentiality and privacy considerations are a part of every telephone triage interaction. Therefore, HIPPA and privacy information should be consistent components of oncology nursing telephone triage education (Gallagher-Lepack et al., 2009; Hickey & Newton, 2012). Helping nurses understand that nursing care provided via the telephone is included in most state scopes of nursing practice and require adherence to

professional nursing standards and laws are vital. Like other nursing care, failure to communicate, follow policies, procedures, utilize professional judgment, and document could result in legal liabilities (Espensen, 2009). An interesting consideration, which currently has state-to-state implications, is the delivery of nursing telephone triage care occurring over state lines related to the state in which the triage nurse is licensed. As this area of telephone triage continues to develop, implications in nursing education need to be assessed and integrated as needed. Related to this project, a review of the keywords telephone triage, telehealth and telephone care did not yield results on the Ohio Board of Nursing website.

Finally, in a personal interview with Susie Newton RN, MS, AOCN, AOCNS, editor of the Oncology Nursing Society's recommended telephone triage text, *"Telephone Triage for Oncology Nurses"*, she urged that one of the most important nursing telephone triage education components would be to teach how to "close or conclude the patient call with plan validation". Effectively concluding the call would consist of utilizing a read or teach back technique to assure the caller understands the plan created on the oncology telephone triage call. Newton remarked that often times oncology triage nurses are under pressure to reduce the time on an individual call or get to the next call resulting in an omission of properly closing a call. She stressed her observations of patient misdirection or misunderstanding, which resulted in additional calls when call plan validation was omitted. Therefore, based upon evidence and her personal observations, she emphasized the need to train nurses to assess and validate patient knowledge at the end of every call during the telephone triage process. After the nurse has confirmed understanding through read back technique, Newton recommends the final question for a nurse to ask the caller, "Is there anything that would prevent you from doing what we have agreed upon?" She remarks that a telephone triage plan can be created but if barriers to implementation, such as lack of

financial resources for medications exist, the plan could be useless. A similar recommendation regarding lack of call conclusion was provided in Ernesäter et al.,’s (2016) study of telephone nurses in the Swedish Health District. Call conclusion was identified as confirming the understanding of the plan created by the caller and the telephone nurse prior to call disconnection. The researchers determined the lack of call conclusion was a threat to patient safety.

### **Methods and evaluation strategies for nursing telephone triage education.**

An initial necessary step in the nursing telephone triage orientation/education process is to determine who will be educated/oriented to function in this role, and then assess nursing professional experience. As stated previously, the AACN (2016) recommends that registered nurses should provide telephone triage. After performing a systematic review of tele-practice regarding pediatric oncology patients, Tsimicalis et al., (2011) recommended that nurses who are going to perform telephone triage should have a minimum of three to five years of nursing experience preferably in a variety of clinical settings. The nurses should be able to demonstrate exceptional communication skills. Further, they report that staff selection and education is a foundational factor to determine if telephone triage will be successful within the health care organization. The researchers record that some of the studies evaluated had small sample sizes, or used study participants from a vulnerable population (pediatric) and therefore, may contribute to non-generalizable findings (Tsimicalis et al., 2011).

Once nurses are selected and experience is reviewed, (Gleason et al., 2013) found it useful to conduct an education needs assessment specific to their organization. Through the utilization an education needs assessment, the researchers assessed nurse’s comfort in advising patients to avoid the emergency room, the determination of specific organizational barriers to

effective telephone triage, the assessment of general cancer knowledge and the identification of oncology emergencies. The findings of the educational needs assessment were integrated into the evidence-based education offerings provided by interdisciplinary providers within their organization.

Teaching strategies are the next consideration for methods and evaluations of oncology telephone triage nursing education. Gleason et al., (2013) reported that when teaching oncology telephone triage information, the integration of discussion, role-play, case studies which required critical thinking, and activities which required electronic health record navigation were useful. The investigators used a pre-and post-test education questionnaire and found between a 20 to 25% increase in knowledge in decision-making comfort, critical thinking and previous disease knowledge deficits (Gleason et al., 2013). After conducting 14 interviews with telephone triage nurses, Wahlberg et al., (2005) determined that the integration of discussion groups during active listening training reinforces information. The authors suggest that the utilization of discussion groups and technological practice for not only the initial training but periodically during clinical practice, as a teaching strategy and an exercise in process improvement can be useful (Grady, 2011; Wahlberg et al., 2005).

Another effective teaching strategy has been call simulation. After the delivery of didactic content, a simulated call environment was created to help participants apply the didactic knowledge (Rutledge, Haney, Bordelon, Renaud, & Fowler, 2014). During the simulation, the students were exposed to a variety of different types of health concerns in a variety of settings. The students were sometimes individually participating in the call and at other times in groups participating in the simulated learning experience together. The purpose of the group was to promote learning between students, and promote team functioning. The results of the Likert

scale student evaluations demonstrated high student satisfaction, reduced anxiety regarding familiarity with technology, and improved assessment skills when a nurse was not physically present with the patient and caregiver. Nurses did cite concern about telehealth technology failure (Rutledge et al., 2014). Therefore, the integration of a simulated telephone triage call may reinforce learning.

### **Critical Appraisal of the Evidence**

#### **Evidence Search.**

Key words used for searching included telehealth, telephone triage, telephone mediated care, oncology, oncology medical home, telephone triage guidelines, and telephone triage standards. Databases included in the literature search were CINAHL, Medline/Pubmed, Cochran, and the National Guideline Clearing House.

At the time of this writing, utilizing Google Scholar and searching the word telehealth, resulted in 54,000 sources. When the search was narrowed to include results since 2013 related to “oncology medical home telephone triage education” the result number dropped to 1,750. Perusal of the first ten pages of results demonstrated articles that are currently used in this paper with repeating themes. After the first ten pages of the Google Scholar search, the articles became increasingly irrelevant. This paper has a pertinent literature review with repeating themes. Therefore, the following information was created after review and grading of the evidence utilizing Melnyk and Fineout-Overholt’s (2015) rating system for evidence evaluation.

#### **Relevant Systematic Reviews.**

Systematic reviews included in this paper were related more to the concept of telephone triage and less to delivering telephone triage education to oncology nurses. Systematic reviews in telephone triage or oncology telephone triage were not identified in CINAHL, Pub Med, or

Cochran databases. The systematic review, Level I highest evidence, performed by Tsimicalis et al., (2011) offered that nurses providing, “telepractice” (a synonym for telephone triage in Canada) required additional training as to assure education regarding severity of the caller’s situation, ability to interact with anxious callers or their family members all while utilizing only the telephone for contact. Assessing severity and interacting with anxious callers or family members via the telephone may also occur in the oncology ambulatory setting. Although this article was focused on pediatrics, the authors reviewed 1,897 titles, which adds strength to the findings. Tsimicalis et al., (2011) also stressed the need to identify experienced nurses within the clinical specialty to train to provide telephone triage.

A meta-ethnography is defined as, “a systematic seven-phase interpretive qualitative synthesis approach well-suited to producing new theories and conceptual models” (France, 2014, p. 2). Purc-Stephenson & Thrasher's, (2010) meta ethnography, Level V, review of 16 from identification of 144 studies provided typical findings that nursing telephone triage increased patient satisfaction and safety. The authors noted that their research was particularly relevant for nurses performing telephone triage in a call center setting. They describe this setting as particularly challenging for nurses, which can lead to increased nursing burnout, and therefore, interventions such as education and frameworks help to reduce burnout. The researchers identify five areas needed to support to maximize telephone triage efforts: gaining and maintaining skills, autonomy, support for a new work environment, education on holistic assessment of patients, and identification and education on the stress and pressure of the role (Purc-Stephenson & Thrasher, 2010, see Appendix C).



**Relevant support for telephone triage nursing oncology education.**

Before an innovation diffusion such as telephone triage can be implemented in any organization, proper resources should be assessed, education should be considered, and multiple innovation strategies combined (Joshi et al., 2014). In addition to the above systematic review information, there were three studies that specifically cited support for telephone triage nursing education. Andrews, (2014), Hickey, & Newton, (2012), and Lamberta, (2016) provide articles of Level VII evidence with repeating themes written in the last five years and share the importance of nursing telephone triage education for the effective triage nurse.

**Relevant support for the use of models and theories.**

In the literature reviewed for this paper, the topic of using a model to guide oncology telephone triage nurses when performing their role was consistently cited as essential. Models were proposed for the overall structure of the role of the ambulatory care nurse, including telephone triage, within the American Academy of Ambulatory Care Nurses essentials document (2016). Models for telephone triage interactions are described by the AAACN (2016, See Appendix D) and Hickey and Newton (2012). Also, the “build a picture” model for telephone triage is described by Purc-Stephenson & Thrasher, (2010). Ernesäter et al., (2016) promoted the use of the “open, listen, analyze, justify, and conclude” model. Finally, Greenberg’s theoretical model of telephone triage (2009, see Appendix B) was also noted. Therefore, it seems appropriate that any oncology nursing telephone triage education orientation program should have content regarding the model the organization chooses for telephone triage nursing.

**Relevant education content**

Another widely supported theme in the literature is the use of protocols for nursing telephone triage, which would require nursing education. The integration of telephone triage protocols to help guide nursing practice is widely supported in the literature. (American Academy of Ambulatory Care Nurses, 2016; Hickey & Newton, 2012; Rutledge et al., 2014; Stacey et al., 2012; Stacey et al., 2015; Tsimicalis et al., 2011). All of these sources are within the last five years and Levels of evidence represented are Level I through Level VII. Although it is important to avoid having triage protocols replace nursing judgment, protocol education would still be necessary in the nursing orientation education process (Wilson & Hubert, 2002).

An additional clearly supported area of nursing telephone triage education is the integration of interpersonal communication and initial interaction content. Towle, (2009) encouraged content regarding the initial seconds of the telephone interaction. Wahlberg et al., (2005) emphasized that nursing tone of voice should portray a kind manner. Hawkins, (2012) stressed that nurses should be trained in “nurturing communication”. Ernesäter et al., (2016, p. 119) offered three areas of education; “communicative competence, ability to listen, and strategies when the only method of communication was verbal”. Desrochers et al., (2016) urged telephone triage nurses to have education that includes interpersonal skills and sympathetic voice tones. All of these studies were graded as Level VI or VII evidence. Plainly, there is a theme for interpersonal communication education content for oncology telephone triage nurses.

Finally, regarding overall content, four sources provided comprehensive course instruction for telephone triage education content. The content recommendations from the AAACN (Espensen, 2009) and Hickey and Newton-ONS (2012) are two of these sources and could be considered. Combining the content from these two sources with the Andrews, (2014)

information on themes and skill building of telephone consultation could offer enhanced educational content. One additional consideration, if the organization began with an educational needs assessment as proposed by Gleason et al., (2013), instructors could add specific tailored content to these standard national recommendations. These pieces of evidence are all Level VI and Level VII evidence that are lower on the evidence grade but still may provide excellent starting places for organization content discussion.

### **Relevant method and evaluation strategies**

In this sampling of evidence, some innovative education strategies also began to have emerging themes. The use of oncology nursing telephone triage didactic content followed by some interactive or competency was mentioned in the literature review. Health care professionals delivered the didactic education content face-to-face or online. After the didactic content, there was either discussion, role-play or simulated telephone triage. These methods were often evaluated by Likert scale or open-ended questions and increased learner knowledge and confidence as previously described (Gleason et al., 2013; Khairat & Rudrapatna, 2014; Rutledge et al., 2014; Stacey et al., 2012; Stacey et al., 2015).

It is clear from the AAACN Position Statement (American Academy of Ambulatory Care Nurses, 2016) the strong support for quality improvements in the areas of safety, quality, education, practice at the top of licensure, and assuring that registered nurses are providing telephone triage in the ambulatory care setting. Additionally, from the ambulatory oncology practice perspective the organization is hoping to have patients' concerns and issues answered quickly in the most effective and efficient method that is available (Towle, 2009). It is also clear from the AAACN position statement that telephone triage nurses need education to perform these duties and the AAACN has worked collaboratively with Espensen (2009) to develop a

core competency text. Concurrently, the endorsement of the Oncology Nurses Society to publish a book entitled, “Telephone Triage for Oncology Nurses” (Hickey & Newton, 2012) which identifies specific needs for education for telephone triage oncology nurses is important and relevant. Despite being Level VII evidence, these texts according to their citing and reference lists were assimilated with evidence based information.

### **Presentation of Theoretical Basis**

Within the literature review the Knowledge to Action Framework (KTA, See Appendix E) has been widely referenced and utilized since initially published in 2006 (Graham et al., 2006). Field, Booth, Ilott, & Gerrish (2014), found in a systematic review that the framework has been cited in nearly 2,000 sources and integrated in over 140 scholarly papers. The goal of the Knowledge to Action framework, which started in healthcare, is to help support all types of individuals to further the transfer of created knowledge to stakeholders or the point of service to enhance whatever process or care being delivered (Graham et al., 2006).

KTA could be applied when developing a telephone triage nursing education program. At the center of the model, the Knowledge Creation Funnel could be the evolution of information regarding the evidence- based nursing telephone triage education content, as well as, relevant delivery methods for teaching telephone triage in an outpatient oncology setting. The Action Cycle could then guide the implementation of the oncology telephone triage orientation education program at the private community outpatient office. The problem identified could be the lack of evidence-based oncology telephone triage nursing education. Collaboration with organizational leaders and completing an education needs assessment prior to the education could help to adapt the knowledge to a local context. Registered nurses and organizational leaders could identify barriers to the implementation of evidence-based telephone triage nursing

education. The education needs assessment results could also allow for tailored education interventions. To monitoring knowledge use, registered nurses could complete a knowledge test and participate in a simulated call role-play with follow up discussion.

### **Section Three**

#### **Clinical Practice Problem Statement**

There is a lack of a consistent, evidence-based, system-wide, cost-effective, telephone triage nursing licensure requirement and education program.

#### **Purpose of the Project**

The purpose of the project was to 1) complete an education needs assessment; 2) develop an evidence-based telephone triage education program for registered nurses working in an ambulatory oncology medical home call center; and describe nursing perceptions of the education program immediately after and one-week post the education offering.

#### **Description of the Setting for the oncology telephone triage education program**

At the time of this DNP project, the nursing telephone triage call center was one large room where there were six staff members; three registered nurses, one licensed practical nurse, and two medical assistants. In the same building where the call center was located, there was an oncology infusion room. Two registered nurses worked regularly in the infusion area during the “after hours” clinic. These two nurses also supported coverage for the telephone triage call center. The staff in the call center manage calls for seven hematology/oncology locations. Per the director of nursing, the average monthly oncology telephone triage registered nurse call volume is 1,000 calls.

**Recommendations of Practice Change**

The recommended practice changes are 1) registered nurses should perform oncology telephone triage and 2) the oncology telephone triage registered nurse staff should participate in an evidence-based oncology telephone triage nursing orientation education program.

**Project development**

The project development and implementation was guided by the Knowledge to Action framework (Graham et al., 2006.) This project was a designated a quality improvement project by The Ohio State University Institutional Review Board. The DNP candidate then collaborated with the Director of Nursing, Medical Director, Chief Executive Officer at the ambulatory oncology office to gain support for the project.

To assess the status of the first recommendation, demographics were collected via survey from the current office telephone triage nurses. The survey was presented for completion at the beginning of the education offering. Specific demographics included were:

1. Age
2. Gender
3. Years of nursing experience
4. Years of oncology nursing experience
5. Years of telephone triage experience
6. Attainment of a professional nursing certification
  - a. If the nurse had a professional nursing certification he or she was asked to name the title of the certification and how many years he or she has had the credential
7. Years working at the community oncology office.

The second practice recommendation was to have all nurses who provide telephone triage in the private community outpatient oncology office call center complete an evidence-based oncology telephone triage education program. The DNP candidate created an evidence-based oncology telephone triage education content outline. The outline was provided to the office call center nurse manager and DON to obtain feedback regarding the proposed telephone triage education program content. Feedback was considered by the DNP candidate and appropriately integrated. The updated proposed content outline was reviewed and approved by the DNP committee, the DON, and the telephone triage call center nurse manager.

The next development step in the project was to conduct an education needs assessment of the registered nurses who were performing the role of oncology telephone triage prior to finalization of the education program content. The hope was to assure that all current needed education elements from the registered nurses perspective were included in the DNP project or planned for in future education programs. The needs assessment was a survey via Google forms with the goal of completion by the telephone triage registered nurses prior to final content development. The education needs assessment included the following questions:

1. When providing oncology telephone triage, what additional education, information, or training would be helpful to you in the area of information technology?
2. When providing oncology telephone triage, what additional education, information, or training would be helpful to you in the area of communication?
3. When providing oncology telephone triage, what additional education, information, or training would be helpful to you in the area of clinical decision-making?
4. When providing oncology telephone triage, what additional education, information, or training would be helpful to you in the area of symptom management?

5. When providing oncology telephone triage, what additional education, information, or training would be helpful to you in the area of medications or treatments?
6. When providing oncology telephone triage, what additional education, information, or training would be helpful to you in any other area?

The DON provided the names of the selected telephone triage nurses who were eligible to participate in the education program. The education needs assessment was emailed to the nurses who were identified to participate. The DNP candidate retrieved the responses and kept them anonymous. Responses were reviewed for content themes, summarized, and considered for content integration by the DNP candidate, DNP candidate committee, and the office leadership.

### **Project Steps to Implementation.**

The education content was determined by review of AACN 2009 (Espensen, 2009) telephone triage standards, AACN 2011 telehealth scope of practice standards (AACN, 2011), the Oncology Nursing Society's "Telephone Triage for Oncology Nurses" book (Hickey & Newton, 2012), and relevant literature review information. The content sections of the AACN standards and the ONS book were reviewed and content identified in both guidelines were integrated into the program education content. Additionally, articles from the literature review that contained specific relevant content were then merged into the content framework. Also, at this point, results of the nursing education needs assessment were considered and content modifications were completed. Two additional areas identified specifically in the AACN standards, were also included since they were also identified in the literature review. The names of the two areas were "Support Tools and Resources" and "Care of the Telephone Triage Nurse". The content outline includes eight topics, which were included in the educational offering. The topics are listed below:



- A. Overview of telephone triage
- B. DPN model for telephone triage-including new DPN telephone triage guideline
- C. Necessary Communication skills
- D. Legal Aspects
- E. DPN Support Tools and Resources
- F. DPN "High Risk" patients who need-advanced assessment:
  - What are these?
- G. Assessing Caller Urgency
- H. Care of the Telephone Triage Nurse

These topics were core oncology telephone triage nurse education content. The goal was each topic would be approximately fifteen slides and it was achieved. At the end of each section “Pearls of Wisdom” were included with comments and tips from ONS Oncology Telephone Triage book editor, Susie Newton, RN, MS, AOCN, AOCNS.

### **Project Implementation**

When creation of the education content was completed, office leadership was notified the education content was ready for delivery. The leadership team provided the names of the nurses to contact for program attendance and timing. The current plan was to have all nurses who regularly work in the call center performing telephone triage, the telephone triage leadership nurse, and the nurses who cover for weekends and vacations, participate in the education program. The office leadership committed to paying the nurses time to attend the education offering. Three educational sessions were offered to allow for nurses to attend the education session while other nurses in the call center during scheduled work time. Susie Newton, RN, MS,

AOCN, AOCNS was present at the first education sessions to offer the Pearls of Wisdom in person and then provided written information for the subsequent offerings.

At the beginning of each education offering the DNP candidate confirmed that participants had completed the nursing education needs assessment. If not, they were offered the opportunity to complete it at that time. The DNP candidate delivered the PowerPoint presentation and provided handouts of the program content. Food was provided during the education session.

### **Project Analysis and Evaluation**

After the question and answer session, participants completed a multiple choice knowledge content test concerning program content (See Appendix F). Additionally, program participants were asked to complete survey questions regarding their nursing perceptions about oncology telephone triage after attending the education event.

The purpose of the knowledge content test was to assess nurses' knowledge after the education session. The knowledge test was constructed by incorporating the principles regarding effective test construction using four resources:

1. Chapter eight, "Testing: the details" of Svinicki & McKeachie's, (2014) Teaching tips: Strategies, research, and theory for college and university teachers.
2. Alexander's conference report from the 2016 American Medical Writers Association, "Best Practices in Writing Test Items" by Kristina Jong, MD (Jong, 2016).
3. "Writing Effective Test Questions" (The Learning Management Corporation, 2017)
4. Chapter 24, "Developing and using classroom tests: Multiple choice and alternative format test items" (Billings & Halstead, 2016).

The test was delivered and completed on paper at the end of the education session. If the test could not be completed due to patient care needs at the end of the education offering, nurses completed the test within 24 hours of program attendance and returned it to the DNP candidate. As recommended by the literature, 22 of the 25 questions were multiple choice with three to four response choices. Three of the questions had more than four responses and more than one correct answer to emphasize key learning points. The DNP committee reviewed the test and surveys for input regarding test structure prior to use. When scoring the test, the entire question was marked incorrect even if only one element was marked incorrectly. A score of at least 80% indicated successful mastery of the education material.

The perception survey questions were:

1. Describe how your perceptions of oncology telephone triage have changed.
2. How will you use this education in delivering oncology telephone triage?

One week after attendance at the education offering, the perceptions survey was sent again with the following questions:

1. In the last week, what information have you used that you learned in the telephone triage education program?
2. Share at least one thing you did differently as a result of the telephone triage education program?
3. Describe any change in your perceptions regarding the role of nursing in providing oncology telephone triage?
4. Have you identified any additional education or process needs at our office regarding oncology telephone triage in the last week? If so, please describe?

### **Data Analysis**

Once all components of the DNP project were implemented, the surveys were reviewed and the knowledge tests were graded. All demographic, test, and survey information was kept anonymous. Descriptive statistics were tabulated and used to report demographic and test results. The nursing telephone triage education assessment, nursing telephone triage initial perceptions survey performed at the end of the education offering, and the nursing telephone triage post one week education survey all have qualitative elements. The qualitative responses were categorized by topic and then reviewed for themes.

## **Section Four: Findings**

### **Results**

Five nurses associated with telephone triage participated in the education program. All respondents were 30 years of age or older and 80% were female. The range of registered nurse experience was between three and twenty-five years. Sixty percent had been working in the specialty of oncology for more than five years. The nurse having the greatest amount of oncology experience was between 21 and 25 years. All participants had less than 1 year experience in telephone triage. Sixty percent of the respondents had worked at the office less than two years. Additionally, there were no respondents certified or credentialed by any professional nursing or healthcare organization including the oncology nursing society (see Table 1).

Table 1: Demographics and clinical characteristics n=5

<b>Characteristic</b>	<b>n</b>	<b>%</b>
<b>Age</b>		
30-39	2	40
40-49	2	40
60-69	1	20
<b>Gender</b>		
Female	4	80
Male	1	20
<b>Years worked as a registered nurse</b>		
3-4	1	20
5-10	1	20
11-15	1	20
16-20	1	20
21-25	1	20
<b>Years of oncology nursing experience</b>		
Less than 1	1	20
1-2	1	20
3-4	0	0
5-10	1	20
11-15	1	20
21-25	1	20

Five nurses completed the Nursing telephone triage education assessment. Results of the education needs assessment are included in Table 2. Two participants completed the Nursing telephone triage education assessment prior to the educational offering. Three nurses completed the assessment at the time or after the educational offering.

The results of the education needs assessment revealed a variety of educational themes. Additional content regarding difficult callers, call etiquette, call urgency, and a listing of oncologic emergencies was included in the telephone triage education offering because of the two pre-education offering nursing assessments. There were clear indications that further telephone triage education regarding medications, cancer disease based information, symptom management, symptom urgency, and workflow processes are perceived as useful learning

experiences. The topics of standing orders and integration of video telecommunication technology are identified by nurses for potential office patient care process improvements (see Table 2).

Table 2: Nursing telephone triage education assessment results

Question	Summarized Responses	Examples
1. When providing oncology telephone triage, what additional education, information, or training would be helpful to you in the area of information technology?	<ol style="list-style-type: none"> <li>1. Improved understanding of medication interactions and medication interaction resources</li> <li>2. Better understanding regarding electronic health record medication software and shortcuts.</li> <li>3. Integration of “video chat”</li> <li>4. Correct medical image selections for patient situations</li> </ol>	<p>“Better knowledge with Intellidose”</p> <p>“Knowing the differences between different scans. benefits of choosing one over the other with PET , CT, MRI, Bone scan etc.”</p>
2. When providing oncology telephone triage, what additional education, information, or training would be helpful to you in the area of communication?	<ol style="list-style-type: none"> <li>1. Effective strategies for difficult call situations</li> <li>2. Providing bereavement support</li> <li>3. Proper telephone etiquette</li> </ol>	<p>“Effective ways to communicate with agitated patients and how to deal with conversation monopolizers.”</p> <p>“Knowing things to say vs things to avoid”</p>
3.	<ol style="list-style-type: none"> <li>1. Directing follow up care to either oncology or primary care provider</li> <li>2. Oncologic emergencies</li> <li>3. Improved understanding of cancer disease progression</li> <li>4. Having easy access to a provider to “bounce off” ideas and or consideration of standing orders</li> </ol>	<p>“Oncology vs. PCP follow up”</p> <p>“I think the current triage pathways are too stringent in their requirements and don't allow RNs to use their nursing judgment to resolve patient concerns. Having established protocols, such as standing orders for specific symptoms, would relieve the need for so many patients to be seen in the office when their condition could be managed at home.”</p>

Table 2: Nursing telephone triage education assessment results (con't)

Question	Summarized Responses	Examples
4. When providing oncology telephone triage, what additional education, information, or training would be helpful to you in the area of symptom management?	<ol style="list-style-type: none"> <li>1. Hair loss</li> <li>2. Constipation</li> <li>3. Urgent signs and symptoms</li> </ol>	<p>“Constipation”</p> <p>“Knowing which sx would call for same day vs. can wait 24-48hrs”</p>
5. When providing oncology telephone triage, what additional education, information, or training would be helpful to you in the area of medications or treatments?	<ol style="list-style-type: none"> <li>1. Oral oncolytics</li> <li>2. Nontraditional anticoagulants</li> <li>3. Medication references</li> </ol>	<p>“Xarelto”</p> <p>“Having current, easy to access drug side effects to review quickly when discussing problems with patients. With so many new medications coming it's hard to memorize all the different possible side effects.”</p>
6. When providing oncology telephone triage, what additional education, information, or training would be helpful to you in any other area?	<ol style="list-style-type: none"> <li>1. Work flow processes with community collaborators</li> <li>2. Urologic Symptoms and Emergencies</li> <li>3. Test result communication</li> <li>4. Ways to improve teamwork and trust</li> </ol>	<p>“Work flow process with ATA”</p> <p>“With testing that is done be it lab work or scans when the provider signs off on the test if they could do a summary of what they would like the pt to know that would be very helpful. Otherwise, I'm reading off the impression. Some of which can scare the pt even if it is not a bad thing. or with the blood work I can't interpret the results. Only able to give lab values. When pts calling in they want to know what that means for their disease.”</p>

Five registered nurses completed the nursing telephone triage knowledge test, the mean was 94% and range was 92-100%.

The results of the nursing telephone triage perceptions survey, performed at the end of the education offering, are included in Table 3. Increased awareness was an important theme in the initial perceptions survey. Increased awareness regarding the importance of the role of oncology telephone triage, active listening and the use of mnemonics to improve consistency of care delivery were identified as changes in perceptions immediately after the education offering. Use of mnemonics also was identified as a behavior that could be integrated in delivering telephone triage because of the education offering. Additionally, use of a systematic approach to calls and understanding the importance of closing a call were evidenced based recommendations that were impactful to the nurses. Lastly, one item that was identified as lacking on the nursing telephone triage education assessment was information on handling difficult callers. Because of the identified gap, the content was added to the education offering.

Table 3: Nursing telephone triage initial perceptions survey

Question	Summarized Responses	Examples
1. Describe how your perceptions of oncology telephone triage have changed.	<ol style="list-style-type: none"> <li>1. Increased awareness of the importance of the role of nursing telephone triage</li> <li>2. Importance of active listening and gaining all useful assessment data from the caller</li> <li>3. Importance of using mnemonics to improve consistent call processes</li> <li>4. Encouraged that office was providing education and reinforcement of the importance of nursing telephone triage</li> <li>5. Realized a call may need to be more than two minutes</li> </ol>	<p>“Triage is the front line with the patient. How important to use OLDCARTS and how important triage is in the medical practice”</p> <p>“I see that we are moving forward and headed in the right direction for the care of our patients”</p> <p>“The information presented is how I feel telephone triage should be done, patient-centered and focusing on resolving the problem.”</p>



Table 3: Nursing telephone triage initial perceptions survey (con't)

Question	Summarized Responses	Examples
2. How will you use this education in delivering oncology telephone triage?	<ol style="list-style-type: none"> <li>1. Importance of using a systematic approach</li> <li>2. Importance of assessment process and mnemonics to guide consistency</li> <li>3. Identified strategies to help with managing difficult callers</li> <li>4. Importance of using call closing with confirmation of plan with caller</li> <li>5. Understand that this education is a starting point and that likely infusion room nurses may also benefit.</li> </ol>	<p>“Work on O (h) (Y) aa ICE. Work on using a systematic approach.”</p> <p>“Excellent strategies taught regarding difficult patients and “monopolize”. Call closing with roadblocks to tx plan excellent idea. Outstanding class presentation.”</p> <p>“As I don’t currently handle triage calls on a regular basis, this information has given me the information I need to handle those calls appropriately and effectively. The mnemonics are a great help to identify needs quickly and ensure a plan is established, with teach-back and assessment of barriers.”</p>

Respondents reported integrating information from the education offering into their delivery of oncology telephone triage. Integration of symptom and call mnemonics, active listening, call closing, assessment of barriers to call plan, and nurse self-centering were specifically mentioned. Nurses reported the use of a call systematic approach, using a call closing with teach back technique and speaking to patients directly as new strategies they implemented since attending the telephone triage education offering. Further change in perception that nurses described after one week included the importance of the integration of the nursing process, the identification and contemplation of “high risk” callers, consideration

of improved ways to care for “high risk” patients and reflecting on the role of the provider and the impact to nurses performing oncology telephone triage. Not all nurses expressed change in perception post one week. Hematologic emergencies, ethical dilemmas associated with oncology telephone triage and continued education on monopolizing callers were topics further identified for nursing education. The results for the nursing telephone triage post one-week survey are found in Table 4.

Table 4: Nursing telephone triage post one week education survey

Question	Summarized Responses	Examples
1. In the last week, what information have you used that you learned in the telephone triage education program?	<ol style="list-style-type: none"> <li>1. Integration of symptom mnemonics</li> <li>2. Integration of active listening and use of smiling during call</li> <li>3. Consistent use of the assessment to barriers of telephone triage call plans at call close</li> <li>4. Integration of “teach back” at the end of a call</li> <li>5. Pause, breathe and center between callers</li> </ol>	<p>“Using the OLDCART and really listening for nonverbal in the communication process.</p> <p>“Monopolizer tips of keeping patient on topic/redirecting.</p> <p>“Questioning to assess for barriers to plan”</p>
2. Share at least one thing you did differently as a result of the telephone triage education program?	<ol style="list-style-type: none"> <li>1. Use of systematic approach with callers</li> <li>2. Assessed barriers to telephone triage call plans using teach back technique</li> <li>3. Increased time speaking directly to patient vs. caregiver on call</li> </ol>	<p>“Trying to use the same approach for every patient.”</p> <p>“Having pts repeat information back to me to make sure they're understanding what we talked about as well as the plan going forward”</p>

Table 4: Nursing telephone triage post one week education survey (con't)

Question	Summarized Responses	Examples
3. Describe any change in your perceptions regarding the role of nursing in providing oncology telephone triage?	1. Increased awareness of the importance of the role of nursing and the use of the nursing process when providing oncology telephone triage 2. Unchanged 3. Increased reflection on “high risk” and frequent callers and improved ways to care for them 4. Helpful to hear content from a provider perspective	“How important phone triage is. Our patient population relies on us.”  “Made me think differently about high risk pts and a better way to manage them. as well as keeping an open mind with pts that frequently call. It was also nice to see the perspective of the NP receiving the triage information.”
4. Have you identified any additional education or process needs at our office regarding oncology telephone triage in the last week? If so, please describe?	1. Hematology emergencies 2. Best way to interrupt a patient who monopolizes the conversation and can talk continually without pausing to breathe. 3. Ethical dilemmas with phone triage. 4. No new educational or process needs identified	“Sharing of information when not listed on HIPAA form completed by someone likely not competent mentally (dementia etc, that requires relay of information IE appointment times to mentally competent spouse for example)”

## Discussion

The DNP project was designed to complete a nursing education needs assessment regarding oncology telephone triage, deliver an evidence-based oncology telephone triage education offering to registered nurses, and describe the nurse perceptions following the education program. The DNP project was a helpful mechanism to assess the status of telephone triage, provide education, and reflect on next steps in the area of oncology telephone triage nursing education. Discussions that occurred as a result of planning for the DNP project provided increased awareness of evidence-based literature to the office leadership team, which caused support for the DNP project. Even though there were office telephone triage guidelines

available, they were being implemented inconsistently. These same guidelines were further improved through evidence-based education recommendations as a result for preparing for the education offering. Utilizing the nursing education needs assessment not only provided information for the initial telephone triage education program but also provided information for further education planning.

As evidenced by the demographics of the participants, all current registered nursing staff working in the telephone triage call center have less than one year of telephone triage experience. With new nursing staff in the telephone triage call center, opportunities for education may be helpful to improve telephone triage knowledge.

An overall theme offered by the nurse's perceptions was increased awareness and understanding of the role of oncology telephone triage and its importance in the oncology office. Initial nursing perceptions after the education program indicated an interest in applying concepts such as a systematic approach to call management, the need for active listening to callers, use of mnemonics for call processes and assessment, use of call closure techniques, and improved telephone etiquette, especially with challenging callers, when delivering oncology telephone triage. One week later nurses reported having implemented more focused assessment skills, the use of mnemonics to provide call consistency and symptom assessment, use of call closure techniques, identification and management of "high risk" callers, and use of a systematic approach for each call to the office. When reviewing the post one week perceptions survey one can identify nurses trying new evidence-based ways to interact with callers regarding telephone triage even though the sample size of education offering attendance was small and the education session was shorter than planned.

Since the telephone triage education program was found to be useful, the current office leadership would like to incorporate the program for future oncology telephone triage nursing orientation. In addition, results of the post-implementation survey provided information to be integrated into the program education content, which can lead to future new education offerings. Additional future recommendations include:

1. Transfer the education content into a VoiceThread (VoiceThread.com, 2017).

VoiceThread is a software technology that allows voice over content to PowerPoint presentations (VoiceThread.com, 2017). After the VoiceThread is created a hyperlink is generated which can be exported to users. An example of VoiceThread can be found at <https://voicethread.com>. Transferring the content in this manner will allow for users to review the material when needed and with flexibility to stop and start content. In addition, the module can then also be available as long as the content is still relevant for future use, a cost effective strategy for a community private practice.

2. The office nursing administration has already approved implementation of monthly Voicethreads with disease specific content and pearls of wisdom from an office interdisciplinary team member since the DNP education program demonstrated usefulness in the delivery of nursing education.

## **Conclusions**

The DNP project was the beginning of improved nursing education at this oncology office. Providing an evidence-based telephone triage education offering in a private community oncology practice is possible and sometimes challenging. Balancing demands of patient care with paid time for education and professional development activities within a lean staff structure requires teamwork and commitment. Supportive office administrators, nursing education needs

assessments results, and evidence based education content can serve to alter nursing perceptions and nursing skills in the role of oncology telephone triage. Increased awareness regarding important topics such as the role of oncology nursing telephone triage and scope of practice, the importance of effective interpersonal communication skills when speaking with callers, the integration of a systematic approach with callers, and the use of mnemonics to improve consistency of caller content and symptom management assessment can be impacted by telephone triage evidence-based education. The DNP education project demonstrated favorable beginnings in improving education of the oncology telephone triage nurses with high scores on the knowledge test. Nurses who participated in the education offering reported integrating behaviors discussed in the educational offering while providing oncology telephone triage. Future evidence-based practice projects could examine if the education translated into behavior change by actually monitoring elements of nurse-caller interactions and compare to the evidence-based recommendations and the selected office call model. Caller satisfaction and call center statistics could also help to recognize the impact of the education.

## **Section Five**

### **Project summary**

This project began with a review of literature related to oncology nursing telephone triage in a private community setting. Review of relevant scholarly evidence based literature and professional nursing standards demonstrated that registered nurses should perform the responsibilities associated with telephone triage in the outpatient oncology office. The current office setting was assessed to determine the extent to which this recommendation was implemented.

Additionally, evidence based literature and professional nursing standards recommend nurses have education in order to effectively provide oncology telephone triage. Performing a nursing education needs assessment can also identify specific nursing educational needs. Combining education materials identified from the needs assessment with evidence-based literature can guide nursing education for nurses providing oncology telephone triage. All of these occurred in this project.

### **Limitations**

Limitations to this DNP project include small sample size. Despite having all current registered nursing staff participate in the telephone triage education program the number of participants was only five.

The DNP project was also impacted by the constraints described as impacts to community private oncology. Due to the need to complete the education offering in 60 minutes and limited staffing, the education program was limited to delivering didactic content. In addition, the knowledge test and perceptions survey was started at the end of the education offering but often had to be completed at the end of the shift due to time constraints. This may have influenced the scores on the Knowledge Quiz.

The culture of the office setting could have influenced the priority of oncology telephone triage nursing education. In this organization, the priority of patient care and the desire to have nurses paid for the educational activity within the typical work day structure, led to a hurried education offering and lack of completion of the knowledge test and perceptions survey at the end of the shift or next day. If the educational program had been presented without this constraint, there may have been time for further learning and retention of information due to the integration of learning strategies to reinforce content recollection. You didn't incorporate all of

the suggestions for the educational assessment. In addition, the education plan included a group simulated call to happen after the didactic content was delivered. Unfortunately, due to the need for the oncology telephone triage nurses to return to patient care and the director of nursing encouraging an adherence to a 60 minute timeframe for the entire education program, this part of the education plan was not completed.

### **Implications for nursing practice and to the DNP Essentials.**

The implications for nursing practice in this project include the need to continue to strive to articulate and advocate for the role of the registered nurse and registered nurse education within the private community oncology setting particularly regarding telephone triage. Identification of the need to be vigilant in articulating the scope of practice regarding telephone triage for all office staff roles is necessary. Adherence to the proper scopes of practice could contribute to improved safety and satisfaction of patients and their caregivers. Another implication is that nurses participated in evidence-based education offerings and are willing to alter their perceptions of nursing care delivery.

In regards to The Essentials of Doctoral Education for Advanced Nursing Practice, (American Associations of Colleges of Nursing, 2006) this DNP project demonstrated at least four of the DNP Essentials. First, the literature review and evidence based education revealed scientific underpinnings of nursing practice. Second, throughout the project there was collaboration with office administrators at the highest level. The collaboration was necessary in order to have attendance at the education offering, participation in testing and survey completion, as well as, considering the telephone triage education essential for all of the staff in the call center who take calls system wide for the network of offices performing telephone triage. By focusing on the call center, the education could influence nursing practice at a system wide level,



thus requiring systems and organizational thinking, a part of DNP Essential II. Third, the education project required an understanding not only of the use of information technology to deliver the education offering, tests and surveys, but also, an understanding of all of the information technology elements necessary to deliver oncology telephone triage in the office setting. Considering impacts of information technology is a part of DNP Essential IV. Finally, and importantly, the project demonstrated DNP Essential VIII, Advanced Nursing Practice. Throughout the entire project, there was an opportunity to speak and educate about the role of the Doctor of Nursing Practice. The office administrators, physicians, and nursing staff were interested in hearing about the role and its impacts to nursing and healthcare. Bringing evidence-based literature to the point of service regarding oncology telephone triage had not previously been performed in this office setting. As the project continued to unfold, there were verbal comments from participants on the importance of the evidence and realizations of the need to have a role to provide this type of information to the point of service. Unexpectedly, there were verbal encouragements from registered nurses who were pleased to interact with a DNP candidate from the perspective of growing pride in the profession of nursing.

**Identify Methods for Dissemination**

The DNP project planned methods for dissemination include sharing the results presentation with the office administrators. The project will be presented for public presentation at The Ohio State University's College of Nursing. Further collaboration with the DNP committee will help to explore opportunities to determine possible publication opportunities for this DNP project.

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## Appendix A

## Telephone triage literature review

Citation and Level of Evidence	Patient outcome	Role of registered nurse	System outcome
<p>1. Nazi 2015-Role of Mobile tech in healthcare: case</p> <p>Literature review of 106 articles included</p> <p>Level V</p>	<p>Patient has an emerging role to use mobile tech to improve cancer supported care</p> <p>Cancer symptoms require management</p>	<p>Telehealth is described as one of the underlying concepts</p>	<p>Mobile Health “mHealth” is primarily used by patients during active treatment for self-management activities. rarely used for prevention and diagnosis activities</p> <p>Inpatient to Outpatient shift is described</p> <p>Not as applicable to lower socioeconomic areas</p>
<p>2. Mastal and Levine- 2012-AAACN RN Survey</p> <p>Descriptive Study- 422 nurses participated</p> <p>Level VI</p>	<p>Enhance Safety and quality</p> <p>Evaluate current nursing care</p> <p>Improved health chronic disease understanding and the influences of treatments</p>	<p>Goal for nursing practice is to increase quality health care, enhance patient outcomes and increase efficiency</p> <p>Provide leadership and coordination in obtaining the necessary services for patients</p> <p>Accountable for patient outcomes</p> <p>Patient satisfaction</p> <p>Improved access</p> <p>Reduction in ER visits</p> <p>Nurse satisfaction in the areas of care coordination and applying the nursing process</p> <p>Nurses ensured compliance with regulatory and accrediting bodies</p>	<p>Ambulatory setting employs 25 % of RNs 3 million</p> <p>AAACN commits to is to increase quality health care, enhance patientt outcomes and increase efficiency</p> <p>Implement shared governance structures that facilitates nursing’s role in safety, care quality, optimal health outcomes</p> <p>Develop scope of practice</p> <p>Educate on the role of nursing</p> <p>Developed a course for staff members clinical competence in the ambulatory setting</p> <p>Develop orientation programs for the ambulatory setting</p>



## Appendix A (con't)

## Telephone triage literature review

<p>3. AAACN Position paper on the role of the registered nurse in ambulatory care- 2016</p> <p>Level VII</p>	<p>Make informed decisions regarding healthcare</p> <p>Monitor conditions</p> <p>Help to manage acute and chronic illness</p>		<p>Regulatory agency requirements are often collected and managed by RN's such as The Joint Commission, National committee on Quality Assurance, and the National Quality Forum</p> <p>Shift to manage between settings, promote wellness, and reduce unnecessary costs</p> <p>Accountable Care Organizations use telehealth to deliver coordinated appropriate care</p>
<p>4. Gleason et al 2013-Ambulatory Oncology Nurses Making the Right Call: Assessment and Education in Telephone Triage Practices</p> <p>Level VI</p>	<p>Continued shift to ambulatory and increasing acuity telephone triage education is necessary to provide appropriate care to patients</p> <p>Emergency room avoidance</p> <p>If emergency room avoidance occurs, then hospital acquired infections should be eliminated for that patient</p>	<p>Nurses are often responsible for triage and management of phone calls in an oncology practice from a diverse populations</p> <p>Nurses need to have critical assessment and management skills</p> <p>Nurses are responsible for “ eliciting the proper information to accurately assess the pt symptoms and to subsequently present case to provider”</p>	<p>Emergency room avoidance</p> <p>If emergency room avoidance occurs then hospital acquired infections should be eliminated for that patient</p> <p>Used Survey Monkey tool for needs assessment which included assessing nurses comfort in emergency room avoidance</p> <p>Nurses had access to diagnoses and ways treat non-life threatening issues</p>

## Appendix A (con't)

## Telephone triage literature review

<p>5. Galiano et al 2013 Study protocol development for telerehabilitation-RTC Impact of Internet based exercise intervention on QOL pain, muscle strength, and fatigue in breast cancer survivors in Spain</p> <p>Level I</p>	<p>Telehealth is promising to provide support to patients in cancer survivorship</p> <p>Telephone communication has been used to address symptoms such as pain fatigue and upper body function</p> <p>Growing interest in non-face to face communication approaches to care</p>		
<p>6. Wilson and Hubert 2002-Resurfacing the Care in Nursing by Telephone Lessons from ambulatory oncology</p> <p>Level VII</p>	<p>In ambulatory oncology, patients expressed the need for telephone support/help line to cope with the debilitating effects and treatments of cancer</p> <p>In Telephone care-patient care is enhanced not just triage performed</p> <p>Improved care</p>	<p>Decision making</p> <p>Provide advice</p> <p>Priority Setting</p> <p>Increased contact with patients</p> <p>Further enhanced when primary nursing is the model of care</p> <p>Ambulatory oncology nurses may have benefits of knowing pt better than the ER setting</p>	<p>Authors propose that there should not be an exclusive use of algorithm/protocol to the exclusion of the caring aspects of nursing by telephone. They further propose that triage may not be the appropriate term in the oncology setting and recommend telephone mediated care as to not undervalue this role in nursing.</p>

## Appendix A (con't)

## Telephone triage literature review

<p>8.Doorenbos et al 2010- Satisfaction with Telehealth Cancer Support Groups in Rural American Indian &amp; Alaska Native communities- Descriptive study</p> <p>Level VI</p>	<p>AI (American Indian) and AN (Alaska Native) cancer survivors expressed satisfaction with videoconference support group</p> <p>Showed positive outcomes for RN's in ambulatory settings chronic illness, reduced readmission rates, reduced secondary complications, reduced mortality, reduced cost of services</p> <p>Telehealth specifically improved patient satisfaction, improved access to care, reduction in emergency department visits, and promote SELF care</p>	<p>Provide psychosocial support to patients</p>	
<p>9.Compaci et al 2011-Effectiveness of telephone support during chemotherapy in patients with diffuse large B cell lymphoma: The ambulatory Medical Assistance experience- France</p> <p>Analysis of 3592 phone calls resulting in 989 interventions</p> <p>Level VI</p>	<p>989 interventions from the 3592 calls</p> <p>The results of the study showed Improved medical management, lower incidence of secondary hospitalization, reduction in delayed treatments, and provided 13% more blood transfusions</p>		<p>Beginning notions demonstrate cost savings</p>

## Appendix A (con't)

## Telephone triage literature review

<p>10.Towle, 2009 Telephone Triage in Today's oncology practice-Editorial.</p> <p>Level VII</p>		<p>Most important part of telephone triage is the initial reaction between caller and staff</p> <p>It is important for staff to be well trained in distinguishing between trained and non-trained staff</p>	<p>One best practice is to develop broad guidelines on how quickly calls will be returned and then share them with patient/caregiver</p> <p>Office practices should evaluate practices regarding telephone triage</p>
<p>11.Wahlberg et al 2005 Bases for assessments made by telephone advice nurses-Sweden</p> <p>14 interviews with 7 telephone triage nurses</p> <p>Level VI</p>	<p>Patients called for self- care advice &amp; to report symptoms of infection</p>	<p>Authors stressed importance of RN to treat the caller in a “kindly manner” as the write this is as important as the advice given</p> <p>Authors stress that training in “active listening” is compulsory, including regular listening to authentic calls by the individual nurse or in groups</p>	<p>3 categories of nursing assessment: Care-seeker related Nurse-related Organization-related</p>
<p>12.Derochers et al 2016-A psychosocial oncology program: perceptions of the telephone triage assessment Canada-Qualitative Descriptive Design</p> <p>These calls were made by CNS</p> <p>Level VI</p>	<p>Result-Triage is a bridge to other care for patient</p> <p>Result-there are different paths to tailored care</p> <p>When dealing with cancer the patients/caregivers described “sympathetic conversational tone with an empathetic presence” as well as feeling as if the nurse is not rushed helped them to feel supported</p>	<p>Result-feeling a supportive presence by the CNS fostered therapeutic relationships</p> <p>Thru the resultant themes described the CNS as trusting and the researchers described this as a foundational element.</p>	<p>“Triage process is crucial within healthcare, requiring well-trained clinicians with an expertise relevant to the needs of the individual to be able to accurately assess their needs over the telephone.”</p>

## Appendix A (con't)

## Telephone triage literature review

<p>13.Tsimicalis et al 2011-Tele-practice guidelines for the symptom management of children undergoing cancer treatment Canada</p> <p>Systematic Review and Guideline development-1,897 titles and abstracts were reviewed</p> <p>PEDIATRIC</p> <p>Level I</p>			<p>They reviewed the ASCO guideline recommendations for development.</p> <p>“The provision of tele- practice requires additional training to accurately assess a potentially critical situation derived from an anxious parent, limited information, or minimal sensory input. Nurses should have minimum of 3 to 5 years of nursing practice, preferably in a variety of settings as well as exceptional interpersonal and communication skills (both verbal and written) knowledge of community resources and ability to work well under pressure.</p> <p>“The successful adoption of tele-practice will rest partly on staff selection and training.”</p>
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## Appendix A (con't)

## Telephone triage literature review

<p>14. Ernesater et al- 2015 Telephone nurses' communication and response to callers' concern-a mixed methods study Sweden</p> <p>Descriptive Exploratory and Correlational design. The researchers studied 21 of 100 nurses investigating 21 calls in a nurse call center.</p> <p>In 2014 100 telephone nurses in Sweden answered 5.5million telephone calls</p> <p>Level VI</p>	<p>Patients need to receive correct advice, reassurance, and confirmation.</p> <p>Call should be patient centered with shared decision making</p>	<p>“Telephone nurses working in these services need high communicative competence and an ability to listen, as their assessments and advice are based solely on verbal communication”</p>	<p>Discussion regarding the negative system and patient effects of always trying to have the shortest conversation possible.</p>
<p>15. Grady -2011-The Virtual Clinical Practicum: An Innovative Telehealth Model for Clinical Nursing Education</p> <p>Descriptive study</p> <p>Level VI</p>	<p>Improved patient care because nurses were better prepared</p>	<p>Nurses have access to learn in many different ways with the ever increasing forms of technology</p> <p>Innovative nurse educators are striving to find most effective flexible methods for students</p>	<p>The Virtual Clinical Practicum was shown to be useful clinical experience where student benefits outweighed the costs of implementation.</p> <p>Faculty reported deeper discussion and critical thinking compared to the common clinical experience.</p>

## Appendix A (con't)

## Telephone triage literature review

<p>16. Laberta- December 25, 2016- Oncology Times- Perfecting triage: Keeping oncology patients out of the ED</p> <p>Quality improvement project</p> <p>LEVEL VII</p>	<p>Appropriate triage clarification of care setting</p> <p>Appropriate triage can reduce patient suffering</p> <p>Care at their own oncology practice facilitates care with known providers</p> <p>Talking with NON clinical staff regarding physical problems can lead to inadequate information to make appropriate care decisions</p> <p>Results included the need for obtaining true data about their processes, the validation of the need for oncology trained triage nurses, confirmed that all calls should be routed to the call center, and they experienced increased patient satisfaction</p>	<p>Assessment of care urgency</p> <p>Direct to appropriate setting</p> <p>Build a relationship with the patient</p>	<p>Incorrect settings can drive up healthcare costs</p> <p>Inappropriate use of higher acuity systems can unnecessarily congest the system</p> <p>Avoidance of unnecessary tests</p> <p>Results included a 60% reduction in emergency department use resulting in a one million dollar savings per month</p>
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## Appendix A (con't)

## Telephone triage literature review

<p>17. Hawkins, S. Y. Telehealth nurse practitioner student clinical experiences: An essential education component for today's health care setting. 2012</p> <p>Level VI</p>		<p>The main emphasis of the article is to identify the need to fully integrate information technology, telehealth into the didactic and clinical education of all nurses but even more specifically APRN.</p> <p>Need for nurse practitioners to have education regarding telehealth</p> <p>Emphasized the importance of developing and nurturing effective communication skills</p> <p>Content recommendations for clinical education- understand technology, legal and HIPPA issues, insurance issues, licensing, interstate issues, coding, care guidelines, data collection &amp; documentation methods</p>	<p>Article notes continuous innovation in health care systems.</p>
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## Appendix A (con't)

## Telephone triage literature review

<p>18. Gallagher-Lepack et al 2009</p> <p>Integrating telehealth in nursing curricula: can you hear me now?</p> <p>Level VI</p>	<p>Patient monitoring can occur as a result of telehealth</p>	<p>The article emphasized the need to align with the ANA competencies for telehealth and nursing informatics</p> <p>Again there is an emphasis on assuring nursing education on security/privacy issues, assessing patient literacy levels, and how to assess patients when there are no visual cues to observe</p> <p>Survey results also highlighted that nurses were concerned regarding the relationship with those patients they are engaging in telehealth interactions.</p>	<p>Telehealth can reduce healthcare costs</p> <p>Telehealth can reduce hospital LOS</p>
<p>19. Rutledge et al 2013</p> <p>Telehealth: Preparing APRN to address healthcare needs in rural and underserved populations</p> <p>Level VI</p>	<p>Stated telehealth benefits: Improved patient sat, outcomes, and access to care</p> <p>Can empower patients to have improved self-management due to increased access to providers</p>	<p>Benefits of telehealth</p> <p>Barriers for providers in implementing and maintaining a telehealth program.</p>	<p>Benefits touted from telehealth: reduction in hospital readmission which leads to reduced healthcare costs</p>

## Appendix A (con't)

## Telephone triage literature review

<p>20. Purc-Stephenson 2010 Nurses' experience with telephone triage and advice: Meta ethnography.</p> <p>Systematic search of 16 from review of 144 relevant studies Canada</p> <p>Level V</p>	<p>Increased satisfaction</p> <p>Increased safety</p>	<p>Provide advice without visual cues</p> <p>Authors found the "building a picture model" is helpful however is impacted by the balance of being the "carer and gatekeeper of healthcare services</p> <p>Use of active listening or "building a picture" from 3 areas- description of physical symptoms, impression of the caller, sense of context</p>	<p>Good historical overview of previous research specific to telephone triage.</p> <p>Telephone triage can reduce MD workload in ER,</p>
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## Appendix A (con't)

## Telephone triage literature review

<p>21. Andrews 2014- Using telemedicine in clinical decision- making England</p> <p>Level VII</p>		<p>“Promoting, empowering, and facilitating health and wellbeing with individuals, families, and communities, and the enhancement of professional practice through the use of information management and information and communication technology.</p> <p>Registered nurses can experience ethical and emotional costs in this role</p> <p>“Skills and knowledge for this role are complex and multifaceted. Preparation is essential to minimize risk” in telenursing</p> <p>Nurses need to communicate with:</p> <ul style="list-style-type: none"> <li>-consultation skills</li> <li>-communication skills</li> <li>-telephone skills</li> <li>-utilization of guidelines</li> </ul>	<p>System definition of telephone triage, “the process of sorting and prioritizing patients of care”</p> <p>Cost effectiveness</p>
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## Appendix A (con't)

## Telephone triage literature review

<p>22.Greenberg 2009-A comprehensive model of the process of telephone triage</p> <p>Semi structured interview of 10 telephone triage nurses in 4 locations</p> <p>Level VI</p>	<p>Pt populations which commonly use telephone triage-chronic illness, geriatrics, pediatrics, rural populations, pre &amp; post op, recent hospitalizations, and discharge</p> <p>Value, meet patient needs, Safe care, increased patient satisfaction</p>	<p>Help pt use appropriate healthcare resources</p> <p>Nurse &amp; provider can increase satisfaction with telephone nursing practice</p> <p>Telephone nursing is an international practice</p>	<p>Framework can support training for the system, develop competencies, and improved outcomes.</p> <p>Reduced cost</p>
<p>23. Stacey et al 2012- Managing symptoms during cancer treatments: evaluating the implementation of evidence-informed remote support protocols Canada</p> <p>Comparative case study</p> <p>Level VI</p>	<p>Safe oncology symptom management</p> <p>Triage of potentially life threatening oncology symptoms</p> <p>Self-Management</p> <p>Most common symptoms Fever with neutropenia Infection Pain Fever Shortness of Breath</p>	<p>Remote symptom assessment</p> <p>Remote triage</p>	<p>Despite availability of protocols they are not always implemented</p> <p>“The hope of the study protocol implementation was to: More appropriate use of system Improved symptom management Enhanced remote nursing practice Improved use of cancer health services</p>
<p>24. Stacey et al 2015- Training oncology nurses to use remote symptom support protocols: a retrospective pre post study Canada</p> <p>100 nurses participated in the education program within 3 healthcare systems in Canada</p> <p>Level VI</p>	<p>Symptom management</p>	<p>Guidance to the appropriate level of care</p> <p>In this study, only 28% of nurses used protocols and 73% stated that they needed enhanced knowledge</p>	

## Appendix A (con't)

## Telephone triage literature review

<p>25. Khairat and Rudrapatna 2014- Building a telemedicine framework to improve the interactions between cancer patients and oncology triage nurses</p> <p>University of Minnesota Pilot Study. 50 patients with standard telephone triage and 50 with the addition of video conferencing</p> <p>Level II</p>	<p>Previously stated</p> <p>Monthly call numbers approximately 1000/month.</p> <p>Average call time between 1:32 and 2:30</p>	<p>Previously stated</p> <p>Again, authors emphasize the importance of the initial nurse patient interaction.</p>	<p>Authors state that telemedicine is continuing to grow.</p> <p>Pilot study-no results from this article.</p>
<p>26.Hickey &amp; Newton, Editors 2013</p> <p>Telephone Triage for Oncology Nurses published by the Oncology Nursing Society</p> <p>Level VII</p>		<p>Oncology Nursing Society supported recommendations for oncology telephone triage nurses</p>	
<p>27. Epsensen, M. Editor for The American Academy of Ambulatory Care Nursing</p> <p>Telehealth Nursing Practice Essentials</p> <p>2009</p> <p>Level VII</p>		<p>American Academy of Ambulatory Care nursing recommendations for telehealth and telephone triage</p>	

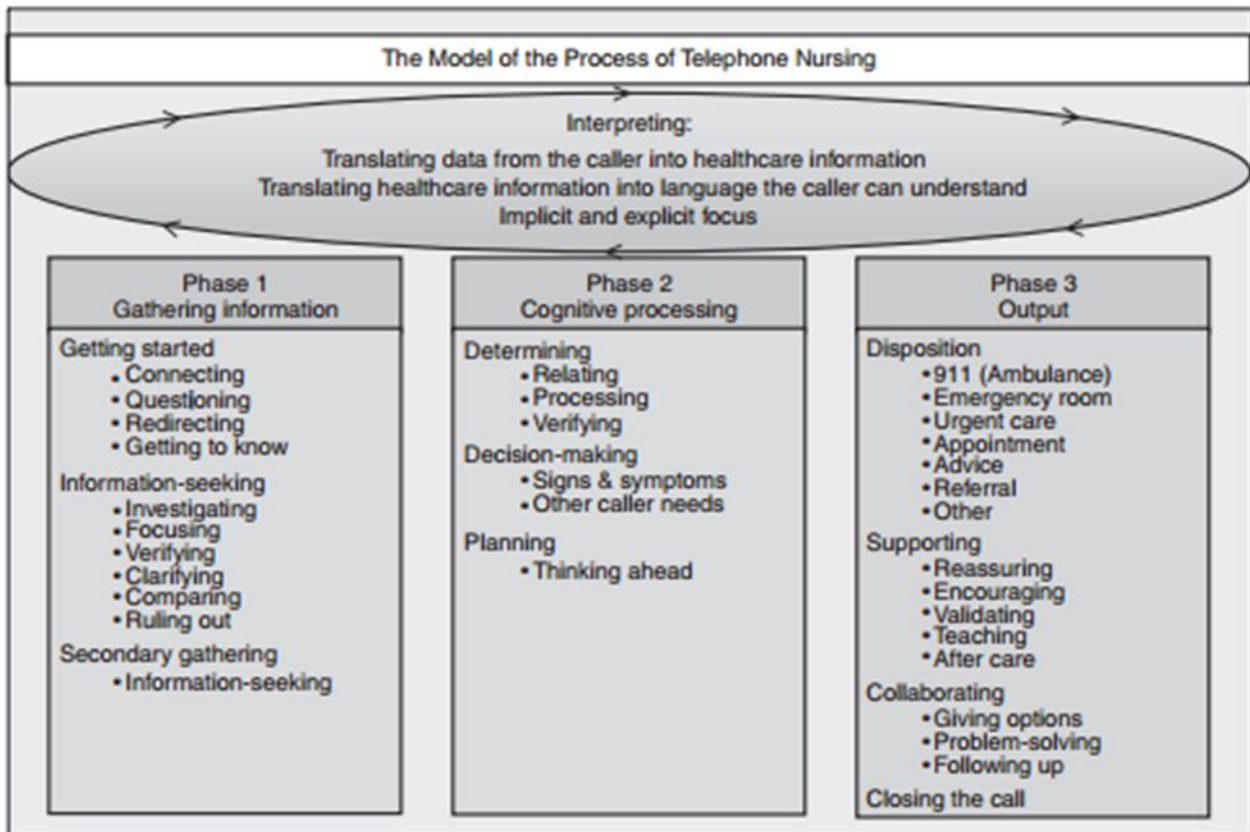
## Appendix A (con't)

## Telephone triage literature review

<p>28. Sharif A Ismail, Daniel C Gibbons and Shamini Gnani-2013 United Kingdom</p> <p>Reducing inappropriate accident and emergency department attendances: a systematic review of primary care service interventions 9916 manuscripts identified and 34 selected for inclusion.</p> <p>Level I</p>	<p>Exhibited acceptable patient satisfaction and clinical safety; cost effectiveness was uncertain</p>		<p>“Telephone triage was the single best-evaluated intervention. This resulted in negligible impact on A&amp;E attendance.</p> <p>Telephone triage did reduce calls to the emergency department</p>
<p>29. Bunn F, Byrne G, Kendall S 2009</p> <p>Telephone consultation and triage: effects on health care use and patient satisfaction (Review) Nine studies met our inclusion criteria, five Randomized Controlled Trials, one Case Control Trials and three ITSs</p> <p>Cochran review Level I</p>	<p>“In general, at least half of the calls were handled by telephone only (without the need for face-to-face visits). Investigators found that telephone consultation appears to decrease the number of immediate visits to doctors and does not appear to increase visits to emergency departments. It is still unclear though, whether it is just delaying visits to a later time. Telephone consultation also appears to be safe and people were just as satisfied using the telephone as going to see someone face-to-face.”</p>		<p>When looking at telephone communication there were no studies to investigate use of algorithm or protocol integration and there was not always a clear delineation of who provided the telephone advice. In the review there seemed to be at least one quarter of the calls with unidentified staff who spoke with the caller.</p>

## Appendix B

## The model of the process of telephone nursing



Greenberg, M. E. (2009). A comprehensive model of the process of telephone nursing. *Journal of Advanced Nursing*, 65(12), 2621-2629. doi:10.1111/j.1365-2648.2009.05132.x

## Appendix C

## Nursing telephone triage meta-ethnography

**Table 3** Themes and sub-themes (second-order constructs) of nurses experience with telephone triage and advice in relation to each study

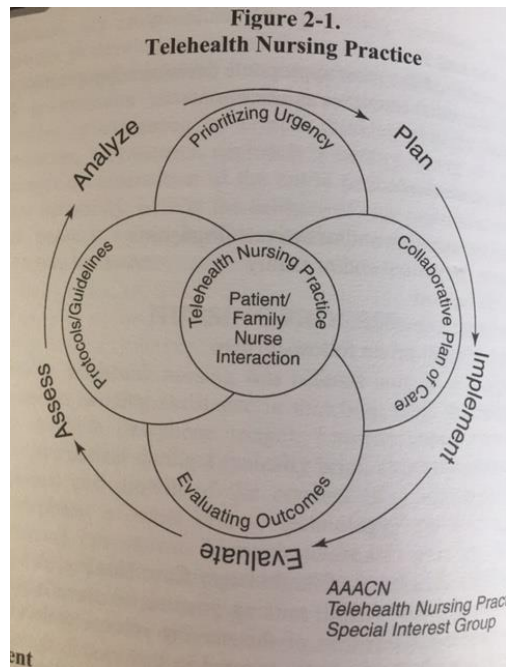
Study		Second-order construct																	
		Developing and maintaining skills				Autonomy		New work environment			Making assessments			Stress and pressure					
		Facilitation	Active listening	Clinical knowledge	Training opportunities	Flexibility	Decision-support software issues	Physical workspace	Call variety	Isolation/no feedback	Assessing symptoms	Assessing context	Assessing person	Heavy workload	Trust/credibility of caller's information	Language/cultural barriers	Hostile callers	Professional vulnerability	Healthcare service accessibility
1	Collin-Jacques and Smith (2005)	x		x		x	x		x		x		x		x				x
2	Corcoran <i>et al.</i> (1988)			x	x	x					x		x						
3	Edwards (1994)			x		x					x	x	x				x		x
4	Edwards (1998)		x			x					x	x	x		x				
5	Hanlon <i>et al.</i> (2005)				x		x					x	x		x			x	x
6	Holmström and Dall'Alba (2002)		x	x					x					x	x		x		x
7	Holmström and Höglund (2007)														x		x		x
8	Knowles <i>et al.</i> (2002)			x	x		x	x	x					x	x				
9	Marsden (2000)	x				x					x								
10	O'Cathain <i>et al.</i> (2004)		x		x		x								x			x	
11	Pettinari and Jessopp (2001)	x	x		x		x	x			x	x			x				
12	Reisinger (1998)			x	x		x			x									
13	Timpka and Arborelius (1990)					x					x				x		x		x
14	Wahlberg <i>et al.</i> (2003)	x	x		x			x		x	x	x		x	x		x		x
15	Wahlberg <i>et al.</i> (2005)		x	x						x	x	x	x						x
16	Wilson and Williams (2000)	x	x		x		x			x	x	x	x		x		x		

Purc-Stephenson, R., & Thrasher, C. (2010). Nurses' experiences with telephone triage and advice: A meta-ethnography. *Journal of Advanced Nursing*, 66(3), 482-494. doi:10.1111/j.1365-2648.2010.05275.x



## Appendix D

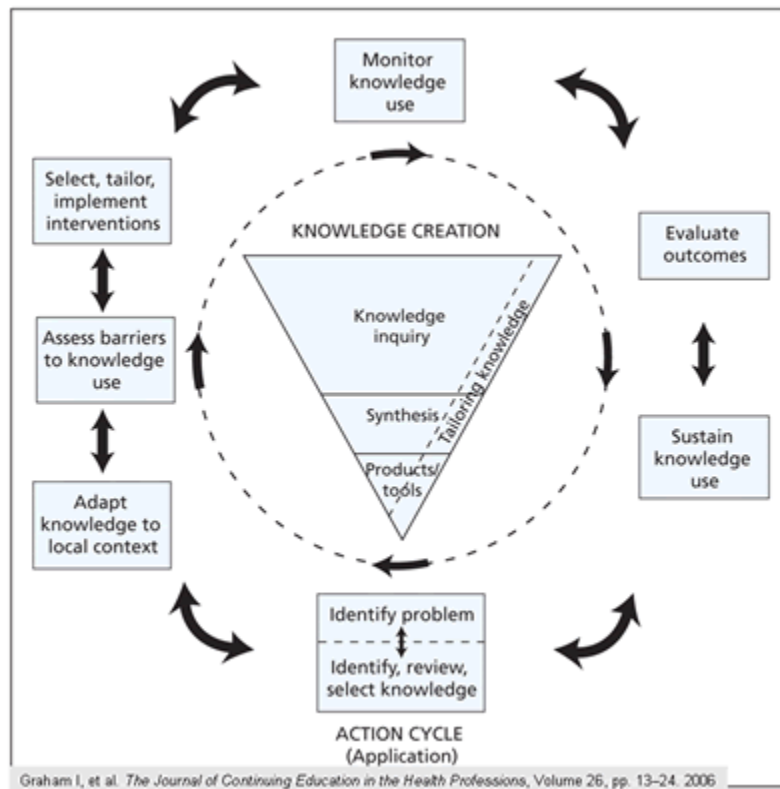
American Academy of Ambulatory Care Nursing telehealth nursing practice model



Espensen, M. (Ed.). (2009). *Telehealth nursing practice essentials*. Pitman, NJ: American Academy of Ambulatory Care Nursing

## Appendix E

## Knowledge to Action Framework (2006)



Graham, I., Logan, J., Harrison, M., Straus, S., Tetroe, J., Caswell, W., & Robinson, N. (2006).

Lost in knowledge translation: Time for a map?. *Journal of Continuing Education In The Health Professions*, 26(1), 13-24.

## Appendix F

## Nursing Telephone Triage Knowledge Test

Name\_\_\_\_\_Date\_\_\_\_\_

Please complete this after attending the educational offering. Select the best answer. The goal of the quiz is to score 80% or higher. Please check your response.

1. According to the American Academy of Ambulatory Care Nursing, "telephone triage" is defined as

☐ an interactive process between interdisciplinary team members to address client urgency and care and appropriate disposition.

☐ an interactive process between nurse and client identifying the nature and urgency of care needs, as well as, determining appropriate disposition.

☐ an interactive process between the nurse and client primarily identifying patient satisfaction survey information.

2. The goal of telephone triage at this oncology office is to

☐ assess the current family member's needs for health care

☐ communicate to callers if they have any symptom need they should go directly to the emergency room

☐ assess to determine how quickly the caller will see a health care provider

3. Three major activities of telephone triage are

☐ Educating, Advocating, and Connecting Callers to the appropriate resource

☐ Educating, Advocating, and Connecting Callers to exclusively community resources

☐ Advocating, Satisfying, and Connecting Callers to the appropriate resource

4. The nursing process is part of professional oncology nursing practice. The steps in the nursing process are

- ☐ Assessment, Review, Implement, and Evaluate
- ☐ Assessment, Analyze, Plan, Implement, and Evaluate
- ☐ Assessment, Plan, Implement

5. Oncology telephone triage nurses should utilize which of the following with **every** call?

- ☐ Computer Based Guideline
- ☐ Telephone Triage Book
- ☐ A Systematic approach

6. The steps of the oncology telephone triage model or systematic approach are

- ☐ Opening, Assessment, Analyze & Plan, Implement, Closing Check, Evaluation
- ☐ Assessment, Analyze & Plan, Implement, Closing Check, Evaluation
- ☐ Opening, Assessment, Analyze & Plan, Critique, Explain

7. Benefits of effective telephone triage

- ☐ Increased patient satisfaction
- ☐ Improved medical, nursing and symptom management
- ☐ Provision of emotional support to patients and their caregivers
- ☐ Increased access to appropriate care setting
- ☐ All of the above

8. OLD CARTS is a symptom mnemonic that stands for

- ☐ Onset, Location, Depth, Character, Associated/Aggravating Factors, Relieving

Factors, Treatments Tried

( ) Onset, Location, Duration, Cleanliness, Associated/Aggravating Factors, Relieving Factors, Treatments Tried

( ) Onset, Location, Duration, Character, Associated/Aggravating Factors, Relieving Factors, Treatments Tried

9. When considering general tips to improve oncology nursing telephone triage, which statement is false?

- ( ) Always maintain patient confidentiality
- ( ) Whenever possible ask to place a caller on hold
- ( ) It is all right to quickly sip a drink during a call if you are very quick
- ( ) Avoid medical terminology whenever possible

10. When considering general tips to improve oncology nursing telephone triage during the call interaction, which statement is false?

- ( ) Talk directly to the patient whenever possible
- ( ) Close the call with read back technique and asking, "is there anything that would prevent you from completing our plan?"
- ( ) It is ok to use yes/no questions because it improves our call timing
- ( ) it is important to consider polypharmacy including over the counter remedies in your assessment and analysis

11. According to the information in the telephone triage education offering, when considering general tips to improve oncology nursing telephone triage when considering non-verbal communication, which statement is false?

- ( ) Yes/no questions are helpful because you can ask more of them quicker
- ( ) Try to "build a picture" of the patient in your mind as you are listening to the caller

☐ Having a patient cough during a call where you can hear the cough

☐ Be alert to other possible symptoms by listening for additional physical signs during call

12. Regarding typical customer service expectations from people calling the oncology office, which statement below is true?

☐ Expectations that quality service will be provided which meet or exceed expectations

☐ Expectations if service quality is not met, it will be remedied

☐ Expectations that their symptoms and health concerns will be kept confidential

☐ All of the Above

13. According to our oncology telephone triage education content, which statement is true?

☐ It is ok to put a caller on hold without permission when you know it will be picked up quickly

☐ Caller satisfaction may increase when nurses have a positive attitude and treat caller with respect

☐ An unexpected follow up phone call to add value is an example of a caller dissatisfier

14. Challenging call situations could occur in which of the following group (s)

☐ Special Caller Populations

☐ High Risk Callers

☐ Difficult Callers

☐ High Risk Symptom Calls

☐ Emergency Calls

☐ All of the above

15. Which statement below is incorrect regarding the five areas where failure of nurses to fulfill their duties creates liability?

- ☐ Failure to ensure patient safety
- ☐ Failure to communicate
- ☐ Failure to follow policies and procedures
- ☐ Failure to meet the demands of a patient
- ☐ Failure to act on professional judgement

16. Below are listed strategies to minimize liability when performing telephone triage except

- ☐ Performing care within your Scope of Nursing Practice
- ☐ If you think it necessary, deny a difficult caller access to a provider even when they request it
- ☐ Keep decision-making tools at your fingertips
- ☐ Provide concise, non-judgmental information

17. Oncology Telephone Triage Guidelines exist in our office for which of the following issues.

Please check all that have a telephone triage guideline available

- ☐ Chest Pain
- ☐ Nausea
- ☐ Constipation
- ☐ Treatment Questions
- ☐ New Lump

18. The telephone triage reference book is located where?

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19. Identify the steps in order of the emergency caller process. Place a number in the proper order beside each item below

\_\_\_ Document the call events in the medical record

\_\_\_ Communicate results of the call with the oncology care provider-physician or nurse practitioner

\_\_\_ Notify another in the call center that you have an emergency call to heighten awareness

\_\_\_ Follow the emergency call guideline within Next Gen

\_\_\_ Speak in kind calm matter to assess for the caller concern

\_\_\_ Provide a friendly call opening

\_\_\_ Confirm understanding of the plan

20. The benefits of utilizing decision support tools include

( ) Standardization, easier & quicker decision-making, support to nursing judgement, serving as a documentation guide to be used at the end of the call, especially if there is deviation from the tool

( ) Standardization, easier & quicker decision-making, replacing nursing judgement, serving as a documentation guide at the end of the call, especially if there is deviation from the tool

( ) Standardization, easier & quicker decision-making, support to nursing judgement, unnecessary to serve as a documentation guide to be used at the end of the call, especially if there are deviations from the tool because telephone triage nurses know what to document



21. When determining caller urgency it is important to (check the correct responses)

- ☐ Quickly and effectively determine caller identity and reason for calling
- ☐ Always keep in mind the “worst case” scenario
- ☐ Always keep in mind the “best case scenario
- ☐ Remember, airway, breathing circulation, and consciousness and apply to caller
- ☐ Know the “high risk” criteria and see if the caller meets the criteria
- ☐ Listen, listen, listen

22. When considering “Special Caller” populations, which statement below is correct?

- ☐ Calls that last under 3 minutes are great because they allow nurse to speak with more callers
- ☐ As long as a non-English speaking person has a trustworthy family member who is providing translation it is ok to just have a detailed conversation with them over the phone regarding goal changing patient topics
- ☐ Older Adults are considered a “Special Caller” population group because they often have many co-morbid medical conditions with simultaneous sensory impairments

23. Check the HIGH Risk caller identifiers at our office

- ☐ New patient caller-new diagnosis or new to the practice\*
- ☐ Caller who is post procedure/surgery
- ☐ Caller with question regarding 4<sup>th</sup> cycle of the same chemotherapy
- ☐ Caller with an insurance question
- ☐ Caller beginning a new treatment
- ☐ Caller who may be neutropenic
- ☐ Caller with advanced disease-for example, Stage IV

- ( ) Caller who needs to know the office address
- ( ) Caller with known communication challenges
- ( ) Caller with a complaint of pain or nausea

24. Increased awareness regarding sources of stressors for oncology telephone triage could lead to improved coping strategies. Which response most accurately describes these stressors specifically to oncology telephone triage?

( ) Repetitive physical actions like holding a telephone receiver to your ear with your shoulder, the desire to have every call result in a positive outcome, working with patients who have advanced illness and are dying, and having conflicts with interdisciplinary team members.

( ) Using a headset and microphone to reduce repetitive physical actions on the nurse's body, the desire to have every call result in a positive outcome, working with patients who have advanced illness and are dying, and having conflicts with interdisciplinary team members.

( ) Repetitive physical actions like holding a telephone receiver to your ear with your shoulder, the desire to have every call result in a positive outcome, working with patients who have advanced illness and are dying, and having harmony with interdisciplinary team members.

25. Oncology telephone triage nurse, Ian, is ending a shift that finished at 7:30p. He missed his son's basketball game at 4:30p. He has muscle tension in his back and neck from sitting 4 hours straight looking at the computer. Two of his favorite patients died today. At this point, Ian could consider which healthy coping strategy?

- ( ) Head straight to the bar to get drunk and drive home
- ( ) Go home, and yell at his family because he had a bad day
- ( ) Keep quiet and do not talk to anyone about this ever. Go home and go straight to bed

( ) Talk briefly to a nurse colleague (without a HIPPA violation) to debrief, get a healthy dinner, get some exercise even if it is just a walk, and try to relax in a way that is useful for him.

26. When working with difficult callers, such as those who are demanding or sobbing, the AACN practice essentials encourage the telephone triage nurse to address which to areas.

- ( ) Caller feelings & Caller problems
- ( ) Caller feelings & Caller significant others
- ( ) Caller problems & Caller significant others